THE EXPERIMENT

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Information flow vital to JEFX

Six initiatives to test info options

By 2nd Lt. Paula Kurtz
JEFX Public Affairs

Have you ever been working on a task or project that has come to a standstill because you were waiting on information from another source?

Have you ever had to make a best-guess decision based on the information available, knowing you were uncertain you had all the key facts on which to base that decision?

What if you were the theater commander during a major military contingency like Operation Desert Storm or Operation Allied Force and you faced those problems?

The lives of American military members and noncombatant civilians rest on your best-guess decision. In future contingencies, the ability to dominate will be based not only on air and space superiority, but information superiority as well. With that in mind, the Air Force is using JEFX '00 to further research and development of a new initiative known as Joint Battlespace Infosphere Management.

Photo by Senior Airman Lee Rogers

The Joint Battlespace Infosphere process is being watched closely at the Combined Air Operations Center at Hurlburt Field, Fla.

See INFO, Page 4

Fire causes delay

Quick response limits damage, downtime

By Capt. Jason Decker and 2nd Lt. Paula Kurtz
JEFX Public Affairs

HURLBURT FIELD, Fla. -- Quick reactions by several JEFX '00 participants resulted in minor damage Wednesday when an electrical fire flared up in a power distribution box and tripped electrical surge protectors throughout the Combined Air Operations Center.

Experiment operations in the center came to an immediate halt as the area was evacuated, and scenario play was suspended for 24 hours as participants worked Thursday to evaluate damage to computer systems and bring them back on-line.

"Had this happened during a real-world deployment, Langley (Air Force Base, Va.) and Nellis (AFB, Nev.) would be able to assume our combat support duties," said Col. Ted Campbell, CAOC director of communications.

Col. Robert Grosvenor first noticed trouble when a bank of computers near the command platform began blinking and he smelled smoke.

As he called for a fire extinguisher, another bank of computers went down.

See FIRE, Page 3

Scenario explores command, control

By Lt. Col. William Murphy
AC2ISRC

LANGLEY AIR FORCE BASE, Va., -- The Joint Expeditionary Force eXperiment is designed to prepare the U.S. Air Force for the challenges of 21st century expeditionary operations.

The experiment process attempts to anticipate and replicate a future command and control system based on desired capabilities.

"The focus of JEFX '00 is expeditionary in nature and 80 percent focused on command and control," said Maj. Gen. Bruce A. Wright, Air Intelligence Agency commander.

Experimentation is fundamentally different from exercises. Experiment trials are designed to be repeated until the desired system and process knowledge is achieved by a highly professional corps of experienced warfighters; exercises involve training all personnel in established processes on fielded systems.

The JEFX '00 scenario takes place in 2006 on the island of Pacifica (the simulation overlays the western U.S.) and involves a U.S. coalition supporting the Republic of Nevidah in a simulated conflict with the People's Republic of Califon.

The third country on the island, the Confederation of Washorgon States is neutral in the dispute over the mineral fields which lie between Califon and Nevidah.

Califon invades Nevidah to take control of the fields and expand their borders. Nevidah requests the assistance of a United States-led coalition.

The Millenium Challenge '00 scenario combines the Pacifica scenario and the Atlantica scenario. In Atlantica, three countries occupy this island: Victoria, Atlantica and Cortina. Cortina's government requests U.S. assistance to control an insurgency being supported by Atlantica.

Atlantica begins an armored excursion into Cortina, and an AEF deploys to Sill Island after a forcible entry by the Army's 82nd Airborne Division. The AEF starts action against the armor formation, with urban operations conducted by Army and Marines.

Cortina forces are defeated and the regional engagement force proceeds with support and stability operations. Both the Pacifica and Atlantica scenarios incorporate life-fly operations with virtual and live experiment execution operations.

JEFX '00 will explore the future contribution of air and space power functions in the areas of command and control, intelligence, surveillance and reconnaissance to 21st century aerospace force execution.

The experiment will address each of these functions and explore future capability requirements within the Air Force core competencies of air and space superiority, agile combat support, rapid global mobility, precision engagement, global attack and information superiority.

JEFX '00 exploration attempts to resolve this central hypothesis: If an Air Expeditionary Force can achieve rapid force projection and provide agile combat support with information superiority, situational awareness and weapon systems whose effects are unhindered in any set of conditions ... then the joint force commander will be able to conduct decisive, simultaneous and continuous combat operations throughout the battlespace to dominate the enemy force with minimal losses. *(Information reprinted with permission from the* Spokesman*, Air Intelligence Agency.)*

Information operations part of JEFX process

KELLY AIR FORCE BASE, Texas -- More than 115 Air Intelligence Agency personnel are participating in the Joint Expeditionary Forces eXperiment '00.

AIA personnel are primarily at Hurlburt Field, Fla., and Nellis AFB to sponsor Project Suter (see related story, Page 5), a long-term project to leverage the information operations utility of established programs in support of Joint Vision 2020 and theater commanders-in-chief requirements.

An Information Warfare Flight is integrated into the Combined Air Operations Center at Hurlburt Field and the Dynamic Battle Control Center is integrated at Nellis. AIA people are also filling intelligence, surveillance and reconnaissance positions in the CAOC and the DBCC.

In addition, AIA personnel are augmenting the Experiment Control Cell at Hurlburt Field by providing scripted information for JEFX '00.

THE EXPERIMENT

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Fire (Continued from Page 1)

About that same time, Lt. Col. Scott Sampson heard the chatter on the radios and went looking for an electrical support member. As he rounded the corner, he noticed sparks and small flames spouting from a power distribution box located outside the CAOC.

"It was popping every once in a while with white sparks going out 15 feet," he said. "There were also small flames around the insulation on the bottom of the distribution box."

Sampson ran to get a fire extinguisher, though it was little help until someone cut power by shutting down the generators.

"Our first concern was to get everyone safely out of the immediate area," said Grosvenor. "We evacuated as soon as the problem was identified, and although the power had been cut, we waited for the fire department to sound the all clear before we returned."

On inspection, it was discovered that a connector for a 200-amp cable — which is approximately the diameter of a baseball – failed and caused electrical arcing, sending power spikes across power lines into the CAOC and fusing the power cable to its connectors.

After sawing the fused connector off of the cables, electricians tested the wiring for reliability, crimped on new connectors, and restored stable power by 6 a.m.

Computer engineers then began the tedious process of testing each of the 400-plus computers for faults and lost data.

"It's not as easy as everyone just coming in and logging back on to their computer," Campbell said. "We had to bring up each of the systems sequentially to see what's corrupted and what's not."

Computer systems experts returned the CAOC to fully operational status at 1:30 p.m. Thursday, with experiment play scheduled to resume Friday.

Photo by Senior Airman Lee Rogers

Staff Sgt. Bill Quick, deployed communications supervisor, verifys telephone numbers set up for the experiment at Hurlburt Field, Fla.

Wired for communications

By 2nd Lt. Kim Layne
JEFX Public Affairs

LANGLEY AIR FORCE BASE, Va. -- They began working long before other participants even arrived. They are the first group you think of when anything goes wrong and the last when things are working correctly -- the unsung heroes.

The ACC Communications Group at Langley is responsible for all communications services for the entire JEFX '00. They are supporting numerous initiatives including hardware and software, as well as processes at the three main locations.

There are over 100 airmen from 14 ACC units, to include reservists, who are responsible for the robust communications system. Starting in May, communications technicians worked up to 80-90 hours a week at times, to ensure the system would be running properly, said Capt. Hugh St. Martin, chief of the JEFX Product Management Office.

Most networks had to be torn out and repatched to fit the specifications of the experiment, said St. Martin. "Without the dedication and expertise of the staff the JEFX communications system would not exist," he said.

This is the third year the communications group has participated in these experiments. They were chosen because the support needed to run JEFX communications is very similar to the day-to-day operations of the group.

Systems Communications is vital to JEFX because it allows the Air Force to support deployed AEFs in a more efficient manner, said St. Martin.

"It saves in both manpower and infrastructure costs," said St. Martin.

Modern technology provides needed capability to the communications community by creating a shorter learning curve for the technicians and ensuring a smaller footprint of forward deployed forces for AEF, said Lt. Col. Randy Gescheidle, deputy, A6 [Communications].

"This ensures unique reachback capability," he said.

The communications staff has created a purely tactical environment by creating a scenario similar to a deployed location, said St. Martin.

ACC System Communications will not be heading out when the other participants leave. They will remain an extra two to three days to break down the equipment, said St. Martin.

Info (Continued from Page 1)

"During any contingency, there's just an incredible amount of information needed to build an effective plan of attack," said Col. Tom Seebo, director, Joint Battlespace Infosphere Management. "JBIM is a concept aimed at finding ways to better manage the flow of information by getting it to the right person at the right place at the right time."

More than 60 people from the operations, intelligence, communications, and command and control arenas are working on six separate initiatives during JEFX '00 that are focused on creating a more efficient flow of information – both in the Combined Air Operations Center and between the military services.

"Currently, the gathering, fusing and dissemination of information is very manpower intensive," Seebo said. "Many of the initiatives we're testing here involve automating tasks through a more effective use of computer programs. With the right program, computers can manipulate information much faster than a human can. We want to exploit that capability to the greatest extent possible."

Within the CAOC, for example, one team is working to standardize the information structure by assigning each computer certain profiles and permissions based on the job description of the person who will be using it.

"The idea here is to try and provide the user with the information needed to accomplish their tasks," Seebo explained. "By having the computer sift through the information, the user can dedicate more time and energy to more constructive tasks."

Photo by Senior Airman Lee Rogers

Tech. Sgt. Lorenzo Thomas and Senior Airman Eugene Magana, Joint Battlespace Infosphere Management, ensure the system is working properly for the operators.

Another initiative, known as the Wright Flyer, takes that idea one step further. Rather than going out and looking for information that would be valuable in the decision-making process, software engineers are working to develop small programs called "intelligence agents" whereby the computer will search specific sites, recognize valuable information, and "push" it to the user.

Another idea being tested under the CAOC information flow initiative is the big screen display.

Toward the back of the CAOC sits a raised platform that faces a 32 foot by 6 foot projection screen. Mounted above the platform are three projectors that are each capable of projecting up to four frames on the screen simultaneously, for a total of 12 frames at any given time. The Combined Forces Air Component Commander sits on the platform along with his senior staff, and can call information to the screen at any time from any of the 400-plus computers in the CAOC.

"The idea is to have one place where the commander can look and determine pretty quickly what is going on operationally," Seebo said.

Information that might be valuable to the CFACC could include real-time video from Unmanned Aerial Vehicles flying over target areas, current and forecasted weather information, current information on the aerial assets available and their positions, and up-to-the-minute intelligence, surveillance and reconnaissance data on potential threats in the area.

"We're also working on a system called the Master Control Panel that will tell us if or when a site's communication is down, what the operational impact is, and identify a backup plan," Seebo added.

While the programs currently being tested are showing promise, their reliability is presenting a challenge.

"Eventually, we'd like to evolve to an automated way to monitor what is going on," Seebo said. "Our goal is to evolve into a very reliable virtual system."

While the overall concept may sound simple in theory, designing the programs to support it is a complex process.

"To make this work, we have to know where the valuable information currently resides, figure out how to access it, and determine where it needs to go," Seebo explained. "I don't think we'll find a complete answer during this experiment; we just want to get further down the road."

Project Suter

Combining information platforms with shooters to defeat time-critical targets

By Lt. Col.
Kurt Kuzniczci
Air Intelligence Agency

U.S. Air Force file photo

The "hog-nosed" RC-135 Rivet Joint, with its extensive antennae array, provides direct, near real-time reconnaissance information and electronic warfare support to theater commanders and combat forces.

KELLY AIR FORCE BASE, Texas -- The Air Intelligence Agency's number one priority at Joint Expeditionary Forces Experiment 2000 is Project Suter.

Project Suter is named after the late Col. Moody Suter, a fighter pilot who understood the value of the right information at the right time for winning air wars. His firm convictions on training resulted in the establishment of the Warrior Preparation Center in Germany, the aggressor squadron concept and the Red Flag exercises.

The Project Suter experiments scheduled for the live-fly portion of JEFX, Sept. 11-14, aim to continue his legacy by marrying up the right information aircraft platforms with the right shooters at the right time, ultimately defeating time-critical targets.

Long-term project

"Project Suter is a broad, long-term project to offer theater commanders new information warfare capabilities while leveraging existing command, control, communications, computers, intelligence, surveillance, and reconnaissance programs," said Maj. Gen. Bruce A. Wright, Air Intelligence Agency commander. "During JEFX we will use Project Suter to employ focused capabilities during the live-fly portion of the experiment."

AIA has teamed with Air Force Materiel Command and Air Combat Command to put together flying experiments using the RC-135 Rivet Joint, EC-130 Compass Call and F-16CJ Fighting Falcon aircraft to investigate these options of engaging time-critical targets.

As evolving Integrated Air Defense Systems are increasingly more difficult for airmen to defeat, Suter attempts to explore options using information operations capabilities to defeat both current and emerging threats.

Two scenarios

There will be two separate scenarios worked each day of the live-fly period to explore and evaluate planned Suter processes. In the first scenario, a modified Rivet Joint and Compass Call will work together to affect experiment time-critical targets. Ultimately, the scenario is planned to conclude with an F-16CJ, "hard killing" the target.

The second scenario uses the same aircraft mix to examine how other synergistic platform arrangements can help defeat new emerging threats. Again, with an end result of "hard killing" a time-critical target. (Where real bombs will hit simulated targets on the Nellis range.)

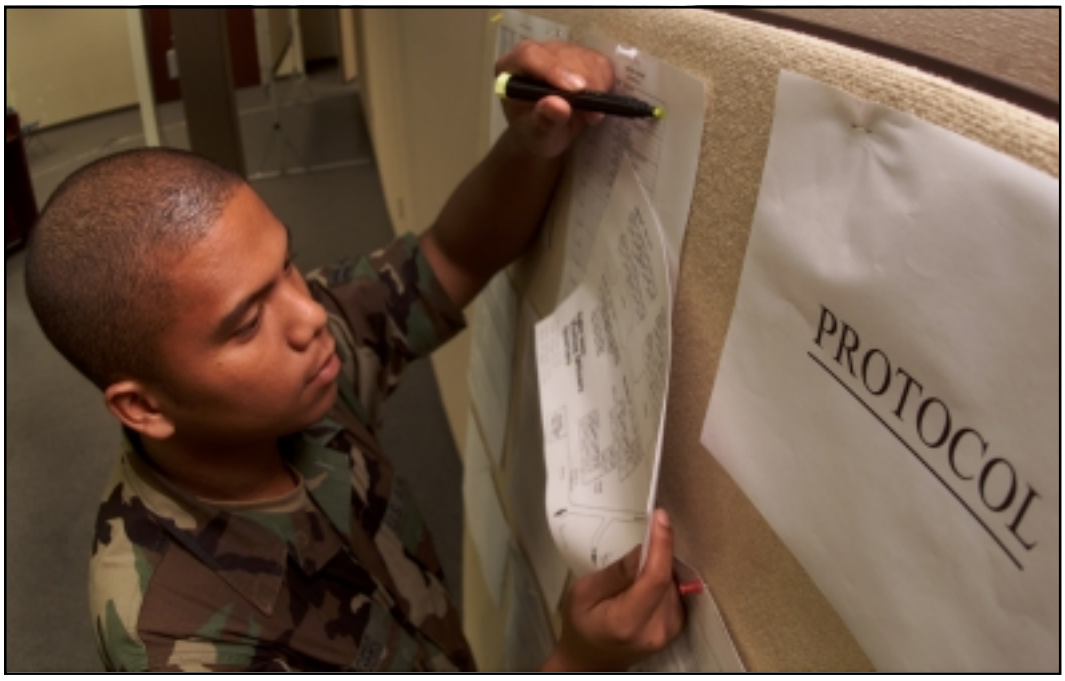
In each scenario, the airborne platforms will reach back to national agencies to access better information for the airborne crews flying the missions. This information is crucial to making the entire process successful, as precision information is a requirement of the U.S. Air Force core competency of precision engagement.

The crews manning the aircraft will consist of AFMC, AIA and ACC crewmembers. The Rivet Joint will require AFMC personnel to evaluate new equipment installed on the aircraft, while AIA and ACC will provide highly experienced current crewmembers to conduct the procedures and provide operational experience to the experiment. Operational evaluation of emerging technologies and new procedures is a central theme to the overall success of JEFX.

Future development

Project Suter is not a one-time shot for JEFX '00. AIA expects a successful experiment of capabilities, but the overarching goal is to further develop Joint Effects Based Operations.

The JEFX experiment should only be viewed as proofs of concept; the greater goal is Joint Effects Based Operations. AIA plans for further testing of capabilities and exploring the use of other platforms, new technologies, and integrating other intelligence functions.



Airman 1st Class Billy Rogers, JEFX '00 protocol staff, double checks the planned location of a stop on a distinguished visitor itinerary with a map of Hurlburt Field.

Photo by Senior Airman Lee Rogers

Protocol makes first impression

By Tech. Sgt. Stefan Alford
JEFX Public Affairs

HURLBURT FIELD, Fla. – The new technologies and equipment on display at Joint Expeditionary Force eXperiment '00 are drawing numerous distinguished visitors curious to see how the Air Force plans to conduct future expeditionary operations.

Whether they come because they are actively involved in the ideas behind the various initiatives, have a stake in the process or to stay abreast of cutting-edge advancements in their fields, they all have one thing in common.

Before they see the latest in new-fangled technology, they get a dose of old-fashioned hospitality.

Here to provide that courtesy and welcome the approximately 60 visitors scheduled to view the experiment over the next week are the members of the protocol support staff.

"We're part of the DVs' first impressions of JEFX, so our mission reflects on the experiment," said 1st Lt. Tania Visconi, officer in charge of the 14-member protocol team.

Senior military and civilian officials who arrive by plane are met at the airport by protocol members, who ensure the luggage is retrieved, transportation is provided, and billeting arrangements are handled.

"If we can take care of the little things for them, then they will stay focused on what they came here for," said Master Sgt. Randee Gildea, an 8th Air Force protocol staff member from Barksdale Air Force Base, La.

Aside from Visconi and three other people assigned at Hurlburt Field, the other protocol staff members all volunteered to come help out during JEFX from a variety of bases.

"The pace is very fluid, very dynamic ... everyone here has to be proactive and adapt."
Master Sgt. Randee Gildea

"I wanted to come here to get the experience," said Senior Airman Wendy Smith, an information manager from Minot AFB, N.D. "I'd never worked protocol before and it's fun to meet new people."

In addition to the meet-and-greet routine, the protocol staff also develops itineraries for all the visitors, provides escorts, and ensures the visitors receive an overview briefing and a tour of the Combined Air Operations Center.

Among the high-level dignitaries visiting JEFX are the Air Force Chief of Staff, Gen. Michael Ryan, and members of the U.S. Senate Appropriations Committee.

"The pace is very fluid, very dynamic," said Gildea. "One day you could be typing an itinerary and the next day you could be escorting a general officer. Everyone here has to be proactive and adapt to the situations."

The bottom line, said Visconi, is to make sure all visitors have a positive experience at JEFX – and that usually begins and ends with the protocol team.